WHAT IS CLAIMED IS:

1. An apparatus for acquiring a phase of a pseudo-random noise (PN) sequence acquired from a signal received from a base station in a mobile communication system, the apparatus comprising:

a first energy measurer for measuring each energy of an early path and a late path from the acquired PN sequence;

a second energy measurer for measuring an energy of an on-time path from the acquired PN sequence;

a first normalizer for normalizing an energy of the first energy measurer with an energy measured by the second energy measurer; and

a third energy measurer for tracking a phase of the PN sequence using the normalized energy from the first normalizer.

2. The apparatus of claim 1, wherein the first energy measurer alternatively measures each energy of an early path and a late path.

3. The apparatus of claim 1, wherein the third energy measurer comprising:

a delay processor for delaying the normalized energy for a predetermined time; and

a subtractor for calculating a difference between the normalized energy and the delayed energy.

4. The apparatus of claim 3, further comprising a second normalizer for normalizing the energy difference calculated from the subtractor to a dynamic range.

5. The apparatus of claim 4, wherein the second normalizer outputs a value normalized in accordance with an equation

$$y=\sqrt{2}\cdot x\cdot \exp\left(-\frac{|x|}{\sqrt{e}}\right)$$

where x is the energy difference calculated from the subtractor, and y is an output.

6. The apparatus of claim 1, wherein the receiving signal is provided from the base station to the mobile terminal as pilot signal on a burst basis.

7. The apparatus of claim 1, wherein the second energy measurer comprises:

a local PN sequence generator for generating the PN sequence having an on-time path's phase; and

a PN despreader for despreading the received signal with the PN sequence having the on-time path's phase.

8. The apparatus of claim 7, wherein the local PN sequence generator resets the on-time path's phase using the energy difference calculated from the subtractor and generates a PN sequence having the reset on-time path's phase.

9. The apparatus of claim 1, wherein the first normalizer includes a divider for dividing an energy of the first energy measurer by an energy of the second energy measurer.

10. A method for acquiring a phase of a pseudo-random noise (PN) sequence acquired from a signal received from a base station in a mobile communication system, the method comprising the steps of:

measuring by a first energy measurer each energy of an early path and a late path from the acquired PN sequence, the energy being first energy;

measuring by a second energy measurer an energy of an on-time path from the acquired PN sequence, the energy being second energy;

normalizing by a first normalizer the first energy with the second energy; and

tracking a phase of the PN sequence using the normalized energy value.

11. The method of claim 10, wherein the step of measuring energy by the first energy measurer comprises the step of alternately measuring an energy of the early path and an energy of the late path.

12. The method of claim 10, further comprising the steps of:

delaying by a delay processor the normalized energy value for a predetermined time; and

calculating by a subtractor a difference between the normalized energy and the delayed energy.

13. The method of claim 10, further comprising the step of normalizing the energy difference to a dynamic range by a second normalizer.

14. The method of claim 13, wherein the step of normalizing the energy difference to a dynamic range comprises the step of outputting a value normalized in accordance with an equation

$$y=\sqrt{2}\cdot x\cdot \exp\left(-\frac{|x|}{\sqrt{e}}\right)$$

where x is the energy difference calculatedby the subtractor, and y is an output.

15. The method of claim 10, wherein the received signal is provided from the base station to the mobile terminal as a pilot signal on a burst basis.

16. The method of claim 10, wherein the step of measuring the second energy value comprises the steps of:

generating a PN sequence having an on-time path's phase; and

despreading by a PN despreader the received signal with the PN sequence having the on-time path's phase.

17. The method of claim 16, wherein the local PN sequence generator resets the on-time path's phase using the energy difference calculated by the subtractor and generates a PN sequence having the reset on-time path's phase.

18. The method of claim 10, wherein the normalization step by the first normalizer comprises the step of dividing the first energy value by the second energy value.

19. An apparatus for acquiring a phase of a pseudo-random noise (PN) sequence acquired from a signal received from a base station in a mobile communication system, the apparatus comprising:

a switch for selecting a local PN sequence generator so that energy values of an early path and a late path can be measured for the phase of the acquired PN sequence;

a first energy measurer for calculating an energy value of a path selected by the switch;

the local PN sequence generator for resetting an on-time path's phase using an energy difference of the selected path, generating a PN sequence having the on-time path's phase, and providing the generated PN sequence to the first energy measurer;

a second energy measurer for measuring an energy value of an on-time path from the acquired PN sequence;

a first normalizer for normalizing an energy measured by the first energy

measurer with an energy measured by the second energy measurer; and

a third energy measurer for tracking a phase of the PN sequence using the normalized energy from the first normalizer.

20. The apparatus of claim 19, wherein the first energy measurer alternatively measures each energy of an early path and a late path.

21. The apparatus of claim 19, further comprising:

a delay processor for delaying the normalized energy for a predetermined time; and

a subtractor for calculating a difference between the normalized energy and the delayed energy.

22. The apparatus of claim 21, further comprising a second normalizer for normalizing the energy difference calculated by the subtractor to a dynamic range.

23. The apparatus of claim 19, wherein the received signal is provided from the base station to the mobile terminal as a pilot signal on a burst basis.

24. The apparatus of claim 19, wherein the first normalizer includes a divider for dividing an energy value of the first energy measurer by an energy of the second energy measurer.

25. The apparatus of claim 22, wherein the second normalizer outputs a value normalized in accordance with an equation

$$y=\sqrt{2}\cdot x\cdot \exp\left(-\frac{|x|}{\sqrt{e}}\right)$$

where x is the energy difference from the subtractor, and y is an output .